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ABSTRACT

Eight physically handicapped (blind, spina bifida, cerebral palsy, or genetic defect) preschool children and eight children with normal sensory motor abilities (mean age of both groups 3 1/2 years) participated in a preschool demonstration project designed to promote equal educational and social experiences in an integrated preschool through the use of environmental adaptation and multisensory media. Independent mobility, developmental skill levels, and number and quality of peer interactions were measured. The surroundings were designed to promote independent mobility and peer interaction and included a number of sitting and working options, such as bolsters, and carpet squares, as well as floor level easels and tables of various shapes and heights. Results of the assessment indicated increased social interactions, accelerated developmental rates, and improved independence. (PHR)

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CONSIDERATIONS FOR INTEGRATION OF PHYSICALLY HANDICAPPED AND NON-HANDICAPPED PRESCHOOL CHILDREN

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CONSIDERATIONS FOR INTEGRATION OF PHYSICALLY HANDICAPPED AND NON-HANDICAPPED PRESCHOOL CHILDREN

ABSTRACT

The physically handicapped child's opportunities for independent and spontaneous interactions with peers and environment have often been restricted because of physical inaccessibility. Section 504 of Title V of the Rehabilitation Act of 1973 has effectively prohibited exclusion of these children from regular public education classrooms without "compelling educational justification." However, the environmental barriers currently existent in educational settings will further prevent rather than enhance equal educational and social opportunities for physically handicapped children. Therefore, an Environmentally Designed Learning Model was developed to promote equal educational and social experiences in an integrated preschool by environmental adaptation and multisensory media. The University of Pittsburgh sponsored a one-year demonstration project which was funded by a grant from the Pennsylvania Governor's Office for Human Resources, from money available through the Developmental Disabilities Services and Construction Act of 1970 as amended by PL 94-103 of 1975, and implemented at the Valley Special Needs Programs, Cheswick, Pennsylvania.

Eight physically handicapped (moderate to severe) and eight non-handicapped children, two to five years of age ($\bar{x}$ = 3 years, 6 months), participated. The curriculum focused on individual assets and achievements, peer equality, and independent mobility in an accessible, varied environment. Independent mobility, developmental skills levels, and number and quality of peer interactions were measured. Results indicated increased social interactions, accelerated developmental rates, and improved independence.

Caregivers must not contribute to a physically handicapped child's social isolation and exploration deficiencies via lapboards, special chairs, and excessive "therapeuticizing" of the child's day. Integrated preschool

programs should focus on increasing functional mobility, adaptability, and social accessibility of the physically handicapped child to maximize learning and social benefits.

CONSIDERATIONS FOR INTEGRATION OF PHYSICALLY HANDICAPPED AND NON-HANDICAPPED PRESCHOOL CHILDREN

"Development is a process of adaptation, whereby the child, in order to grow, must effect changes upon his environment, and, in turn, adapt to the demands which the environment places upon him. This child-environment interaction not only contributes to, but actually constitutes development, as an intrinsic property of life and as the developmental curriculum."
(Jean Piaget, 1973)

Learning for all children is dependent upon the establishment of a secure, mutually interactive relationship between the child and his social and physical environment. Within any given environment a child needs to feel:

(1) Physically safe and comfortable.

(2) In control to some extent, over himself and his surroundings.

(3) Purposely active, i.e., stimulated to a "proper" arousal level--not overstimulated or understimulated.

The environment should provide superficial variation with an underlying stability which is predictable. Only then will a child reach out to explore and to learn. One way of implementing these environmental considerations in preschools is by clearly defining the activity areas (SLIDE 1) which are comfortable, self contained with definite boundaries. In each area accessible, inviting materials should be displayed which announce to the child what he can do there. (Olds, 1977) (SLIDE 2)

Traditional preschool environments usually do not provide enough variation within the environment to allow for individual differences and alternative modes of learning. For example, every one sits on chairs (SLIDE 3) for story time (or whatever) and all those chairs are usually exactly like --despite the various heights, weights, and different preferred sitting positions of the children. ~~Also~~, The average preschool student really doesn't learn to appreciate his own uniqueness and different assets and needs as a person, nor does he learn to appreciate and accept other children's individual differences ~~and~~ that there are many different ways of learning, growing, and doing everyday things. As these children are learning here. (SLIDES ~~4 &~~ 5)

Now let's focus on the Special Preschool for Handicapped Children. Usually they are highly individualized (his own equipment, learning program and schedule as well). (SLIDE 6) Typically, learning experiences for him are one-to-one with an adult in control of tasks and the child learns very young to be self-focused and that he's "special" and different. However, he doesn't learn to appreciate his basic likenesses to all children, nor does he learn to appreciate the assets and needs of others. In addition, he is deprived of the opportunity for informal exploration to learn about his world and for peer contacts and for the many spontaneous social interactions which are such an important part of the regular child's learning day, and are essential for development to progress. The special child doesn't learn to deal socially with the world as an equal person, with certain rights and responsibilities, nor does society get to know him as a person--and as a friend. (SLIDES 7, 8 & 9) The development of tolerance and equal acceptance is dependent on many opportunities for informal exploration and social interactions.

If one simply mainstreams a handicapped child into a regular educational setting, without making some changes in that preschool environment, you further handicap the child with environmental and social barriers. And this is how its been mandated:

> "Mainstreaming is the educational process of maintaining or returning exceptional persons who can best profit from such placement to the regular education classroom with all needed supportive services being provided in accordance with the nature of the placement."
> (Pennsylvania State Board of Educational Regulations, 1975, 1977 and Continues in Effect.)

This mandate says nothing there about <u>adapting</u> the educational environment.

The rationale and benefits to all children for integrating physically handicapped and non-handicapped children into the same preschool experiences has been documented by a number of authors (Bricker, 1978; Friedland, et al, 1976; Guralnick, 1978). In addition, Section 504 (of Title V) of the Rehabilitation Act of 1973 has effectively prohibited exclusion of physically handicapped children from regular public education classrooms without "compelling educational justification." So these children will be mainstreamed. And we all know that PL 94-142 gives first priority for educational placement to the severe, not previously educated, child. We really need to include at least five main areas within the learning program in order to make preschool integration of physically handicapped children a reality as well as beneficial educational experience for all children:

(1) Adaptation of the learning environment to make everything physically and cognitively accessible to everyone. (SLIDES 10 & 11)

(2) Provision of multisensory learning stimuli and experiences to offer various choices of materials and alternative routes to learning. (SLIDES 12 & 13)

(3) Curriculum focus on individual assets and differences as well as peer tolerance and/or acceptance of all children to promote normal peer social interactions. (SLIDES 14 & 15)

(4) Curriculum focus on equality and the sameness of basic needs of all children despite superficial inequalities and differing superficial needs. (SLIDES 16 & 17) Again, to promote social interaction and peer tolerance.

(5) Focus on everyone's need for a functional mobility for independence and exploration. (SLIDES 18, 19, 20 & 21)

Aside from the necessary considerations within the learning situation itself, several other concerns are imperative. Preplanning and teacher inservices to prepare for the physical variations and medical needs for the children are essential. In addition, medically-trained classroom aids or nursing personnel should be part of the staff to handle the necessary physical care. Close medical monitoring is essential for some physically handicapped children (e.g., tracheostomy and spina bifida). However, as the medical needs are addressed throughout the day, learning opportunities arise for the curriculum focuses of underlying sameness and individual superficial differences (e.g., different ways to breath, go to potty, etc.) Support services from the various therapies and specialists are essential also for a "mainstreaming" program to be effective.

These focal areas were the basis of developing an Environmentally Designed Learning Model Program (SLIDE 22), which was partially funded by the Commonwealth of Pennsylvania, Office for Human Resources, with Federal money available through the Developmental Disability Services and Facilities Construction Act of 1970 as amended by PL 94-103 of 1975. It was funded to the University of Pittsburgh as a special demonstration project for one year: ($39,616) from July 1, 1977 to June 30, 1978 and (SLIDE 23) was a cooperative project between the University of Pittsburgh and the Valley Special Needs Program of Cheswick, Pennsylvania, where the program was implemented. (SLIDE 24) The University of Pittsburgh supplied the matching funds for the grant via personnel and services ($13,212); and the Valley Center provided the area for the project, the teaching staff, and such support services as transportation, therapy, social services for the children. Following the granted year, the Valley Center has continued the program and has moved it to this building (SLIDE 25) which is even more accessible than the former site. (SLIDE 26)

Sixteen children, between 18 months and 59 months (4 years, 11 months) were enrolled in the program (SLIDE 27): 8 of whom had a moderate to severe sensory-motor deficiency, including 2 blind children, 2 spina bifida, 5 cerebral palsy, and 1 genetic defect problem; the other 8 children possessed average, so-called normal sensory motor abilities. The mean age of the handicapped children was 41.6 months (3 years, 5 months); mean age of non-handicapped was 31.8 months (2 years, 8 months). Student requirements included for the 8 handicapped, the physical problem must be considered the primary one, i.e., suspected and/or tested good cognitive potential (with the environment or physical problem preventing their learning development) Other student requirements included attendance of at least 3 days per week for 4 hours each day.

Actually there were no problems with that requirement!--but it was a problem getting them out of the project for teaching planning time! The ~~other~~ final requirement was for parent participation of one-half day per month in the classroom or one night per month at the parent meetings. The staff included four teachers--two special educators and two early educationalists--with support services of physical therapy, speech therapy, Children's Hospital home nurse consultant, spina bifida clinic nurse consultant, child psychologist and a specialist from the School for Blind Children. The project was funded as a demonstration service project to see if our mainstream design was, in fact, feasible and if so, is it beneficial for all children. First we defined protected interest centers which had many environmental choices for accessibility. (SLIDE 28) For example, this big yellow rug defined the circle time group area. It could be discriminated from other areas by color (vision) by texture (shaggy) and by shape (round). Notice the various seating supports and positions available to the children. This was done throughout the environment with many choices available to increase accessibility to materials and to activities. (SLIDE 29) This orange chair was the standard chair at the Valley Center, but we added other seating choices like this chair (SLIDE 30) and this one (SLIDE 31) as well as bolsters, wedges, carpet squares and other "sitters" like you saw in the previous group slides and is exemplified in this group slide. (SLIDE 32)

Other area definitions we used were tables: (SLIDE 33) This rectangle table signaled sensory art while (SLIDE 34) this pie shaped table defined the puzzle area.

Throughout each defined area we bought or modified equipment and ~~future~~ furniture for accessibility. (SLIDE 35) Like this bookcase, (SLIDE 36) this three-sided easel. We also included several floor level easels where one could socialize as one painted or cleaned up (SLIDES 37, 38, & 39). (SLIDE 40) These bins and (SLIDE 41) these shelves were available on the market and provide accessibility. The other side of our accessibility was to encourage the child to adapt. We demanded some form of independent mobility on the part of each child--roll (SLIDE 42), scoot (SLIDE 43), hitch (SLIDE 44), walk (SLIDES 45 & 46) or even dance--but some way get from here to there and to take responsibility for getting themselves there. We tried to have the children moving throughout the day and experiencing many positions with maximum time for informal exploration and peer interactions. Although at times during the day, the child would regress to earlier skills or undesirable behavior patterns to reach a highly motivating goal faster, he was learning other necessary, high quality educational experiences such as persistance, initiative, adaptability, flexibility of skills, and the important concept of self esteem that comes from independent action "I did it by myself!"

For the 8 handicapped children we maintained graphs of the independent mobility. (SLIDE 47) This one plots the monthly crutchwalking progress for a constant distance of 30 feet. In August it took her 7 minutes, 15 seconds to cover the distance and by May approximately 1½ minutes. (SLIDE 48) This ~~one~~ graph is of a prone scooting child and plots the distance covered in 3 minutes (from 0 in November to 11 feet in May). We ~~set~~ established these tasks with the assistance of the child's therapist to insure that they were in fact gaining necessary mobility. We did not setup controls or a true research methodology, so we can't say they improved because of the project. (They might have done just as well without it--but they certainly progressed!)

Another therapy compromise was NO lapboards (SLIDE 49) if possible in school. They really isolate children by imposing an actual physical barrier which prevents peer interactions. So we accommodated proper positioning by other means (like this corner chair adaptation). Social reciprocity and equality of interactions (sharing, etc.) are developing during the preschool years (Smith, 1977) and we did not want to interfere by "therapeuticizing" the child's day.

The multisensory learning materials (our second focal area) were not so readily available commercially. So the staff did considerable improvising and designing. The sensory art time (SLIDE 50) utilized senses of smell, taste, touch, vision and often hearing. (SLIDE 51) The sand and water tables (SLIDE 52) were another source of many sensory experiences: from (SLIDE 53) leaves to shaving cream to spaghetti, to treasure hunts. The staff were truly resourceful and creative with activities--even creating a multisensory haunted house for Halloween. A sensory wall was designed that is really fantastic. (The slides don't do it justice.) It is approximately 15 feet long and 4 feet high. (SLIDES 54, 55, 56, 57, 58 & 59) It was created by the Creative Recycling Center of Pittsburgh. Throughout the project program everything presented was presented to at least two sensory modalities.

The last two focus areas, i.e., differences are acceptable and that although children have differences ~~but~~ they also have equal and similar basic needs, were interrelated and interwoven throughout the project by the staff. This is evident in the acceptance of different independent mobilities with the assumption that they are equally valid means of transportation.

Each child within the program was tested with the Center's developmental checklists and other measures to assess his abilities and needs. An individual program was designed by him and his teacher (and other relevant people) to focus on the "target skills" for which he would work.

(A mini-IEP process which was re-evaluated and updated throughout the year.) These target skills yielded a rate of developmental progression based on a standard normal. (SLIDE 60) Measures showed an accelerated rate of developmental progress in all the children (physically handicapped and non-handicapped) in cognitive skills, especially and usually language and social skills as well. (SLIDE 61) In addition to the target skills each child contracted weekly, biweekly or monthly for his classroom responsibilities. This focused on everyone's need to have a feeling of belonging to a social group and to have achieved some successes within the group. (Lowrey, 1978) (SLIDE 62) A chart pictures each child's assignment, for which he was responsible. Again focusing on many different ways to do a job. This child pushed the lunch cart this way (SLIDE 63), but another child pushed it by scooting along the floor. The next few slides are of "workers" sharing tasks (SLIDES 64, 65, & 66) One of these children has a spina bifida and one doesn't have a physical problem, but they appear as they should, just two preschoolers sharing a job. And the sharing led to friendships which seemed to be based on the individuals' involved, unrelated to whether or not a physical handicap existed. (SLIDES 67, 68, & 69) That was one of the non-quantified peer interaction changes that we observed. More formal measures of the numbers of peer interactions--visual, verbal, and physical--were taken during the project year. Each child was observed once a week with 3 others (2 handicapped and 2 non-handicapped) in a 20 minute free play situation. The number of physical, verbal and visual contacts were recorded for each child and compiled as you see on the slide. (SLIDE 70) Note the changes from September to March. One is tempted to say the children stopped staring at each other and started to play together!

Returning now to our original question: Is preschool mainstreaming feasible and beneficial if the necessary considerations of environmental adaptations, multisensory presentation of learning experiences, increased staff number and expertise, focus on individual differences, focus on basic needs, and focus on functional mobility are met?? Our project participants--staff, parents, children, and administration and community--all said "YES."

I would like to close with a quote:

> "In schools that are most responsive to individual differences in abilities, interests, and learning styles of children, the mainstream is actually many streams, sometimes as many streams as there are individual children, sometimes several streams as groups are formed for special purpose, sometimes one stream only as concerns of all converge. We see no advantage in dumping exceptional children into an undifferentiated mainstream; but we see great advantages to all children, exceptional children included, in an educational program modulated to the needs of individual children, singly, in small groups, or all together." (N. Hobbs, 1975)

April 23, 1979

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